

Amendments to the Claims

Claim 1 (Cancelled)

Claim 2 (Currently amended): A nucleic acid molecule according to claim \pm 30 wherein the polylinker is inserted in place of all the nucleic acid sequences encoding ~~reduction~~ reductive domains and which are ~~normally~~ naturally included in said extension module.

Claim 3 (Withdrawn): A nucleic acid encoding at least part of a Type I polyketide synthase, said part comprising at least part of an extension module, wherein the nucleic acid has a polylinker with multiple restriction enzyme sites, which polylinker connects nucleic acid encoding at least part of an acyl transferase enzyme to nucleic acid encoding at least part of an acyl carrier protein.

Claim 4 (Currently amended): A nucleic acid molecule according to claim \pm 30 wherein at least one of the restriction sites included in the polylinker ~~are~~ is absent from the Type I polyketide synthase-encoding nucleic acid.

Claim 5 (Currently amended): A nucleic acid molecule according to claim \pm 30 wherein at least one of the restriction sites included in the polylinker is absent from ~~or absent from at least about half of~~ other naturally occurring nucleic acid sequences which encode reductive domains of Type I polyketide synthases.

Claim 6 (Currently amended): A nucleic acid molecule according to claim \pm 30 wherein the polylinker includes at least ~~some~~ one of the following restriction sites: AvrII; BglII; SnaBI; PstI; SpeI; NsiI; Bsu36 \pm I; NheI; and HpaI.

Claim 7 (Currently amended): A nucleic acid molecule according

to claim ± 30 which additionally encodes a loading module.

Claim 8 (Currently amended): A nucleic acid molecule according to claim ± 30 which additionally encodes one or more further extension modules.

Claim 9 (Currently amended): A nucleic acid molecule according to claim ± 30 further including a nucleic acid sequence incorporated into the polylinker, which incorporated nucleic acid encodes one or more replacement reductive domains.

Claim 10 (Currently amended): A nucleic acid molecule according to claim 9 wherein said one or more replacement reductive domains is selected from the group consisting of a β -ketoreductase (KR), a dehydratase (DH) and an enoyl reductase (ER).

Claim 11 (Currently amended): A nucleic acid molecule according to claim 10 wherein said one or more replacement reductive domains include(s) at least a β -ketoreductase (KR).

Claim 12 (Currently amended): A nucleic acid molecule according to claim 10 wherein at least one of said one or more replacement reductive domains is from a different extension module of ~~the same~~ said Type I polyketide synthase as said at least part of a Type I polyketide synthase.

Claim 13 (Currently amended): A nucleic acid molecule according to ~~any one of~~ claim 10 wherein at least one of said one or more reductive domains is from a different polyketide synthase.

Claim 14 (Currently amended): A vector including a nucleic acid as defined in claim ± 30.

Claim 15 (Currently amended): A host cell transfected, transformed or conjugated with a nucleic acid as defined in claim 1 ± 30.

Claim 16 (original): A host cell according to claim 15 which is a cell of a *Streptomyces* species.

Claim 17 (original): A host cell according to claim 16 which is a cell of *S. erythraea* or *S. avermitilis*.

Claim 18 (Currently amended): A method for producing a nucleic acid encoding a novel polyketide synthase, the method including the steps of:

- i. providing a nucleic acid as defined in claim 1 ± 30; and
- ii. incorporating into said polylinker ~~nucleic acid~~ a nucleic acid sequence which encodes at least one replacement reductive domain.

Claim 19 (Currently amended): A method according to claim 18 wherein said nucleic acid sequence encodes at least one replacement reductive domain selected from the group consisting of a β -ketoreductase (KR), a dehydratase (DH) and an enoyl reductase (ER).

Claims 20 (Withdrawn): A method for producing a fermentation product containing a polyketide, the method including the step of culturing a host cell as defined in claim 15.

Claim 21 (Withdrawn): A fermentation product containing a C22-C23 dihydroavermectin, substantially free of other macrolides.

Claim 22 (Withdrawn): A fermentation product according to claim 21 wherein the dihydroavermectin is ivermectin.

Claim 23 (Withdrawn): A fermentation product containing a B₁ avermectin substantially free of B₂ avermectins.

Claim 24 (Withdrawn): A method for producing a polyketide, the method including the steps of:

- i. providing a fermentation product resulting from the method of claim 20; and
- ii. at least partially purifying a polyketide from said fermentation product.

Claim 25 (Withdrawn): A method according to claim 24 wherein the polyketide is an avermectin.

Claim 26 (Withdrawn): A method according to claim 25 wherein the avermectin is a B₁ avermectin.

Claim 27 (cancelled)

Claim 28 (Previously presented): A host cell transfected, transformed or conjugated with a vector as defined in claim 14.

Claim 29 (Withdrawn): A method for producing a polyketide, the method including the steps of:

- i. providing a fermentation product which contains a B₁ avermectin substantially free of B₂ avermectins; and
- ii. at least partially purifying a B₁ avermectin from said fermentation product.

Claim 30 (New): An isolated recombinant nucleic acid molecule encoding a Type I polyketide synthase (PKS) wherein said nucleic acid molecule is produced by:

- a) providing a polynucleotide encoding at least an extension module of a PKS wherein said extension module contains at least one reductive domain;

b) deleting a portion of the polynucleotide which corresponds to said at least one reductive domain of said PKS; and

c) replacing said deleted portion with a polylinker region having multiple restriction enzyme sites; wherein said deleted portion corresponding to said at least one reductive domain is at least one domain selected from the group consisting of: a β -ketoreductase (KR) domain, a dehydratase (DH) domain and an enoyl reductase (ER) domain; wherein said polylinker is an in-frame addition to the PKS; and wherein said polylinker encodes a polypeptide.

Claim 31 (New): An isolated or recombinant nucleic acid according to claim 30, wherein the polylinker region comprises the sequence of SEQ ID NO: 56.

Claim 32 (New): An isolated or recombinant nucleic acid according to claim 30, wherein the polylinker region is selected from the group of polylinkers in plasmids pJLK114 and pJLK117.